

37 per cent of all human-induced methane, which is largely produced by the digestive system of ruminants, and 64 per cent of ammonia, which contributes significantly to acid rain.

Livestock now use 30 per cent of the earth's entire land surface, the report says, mostly on permanent pasture but also including 33 per cent of the global arable land — used to produce feed for livestock, the report notes. As forests are cleared to create new pastures, it is a major driver of deforestation, especially in Latin America, where former forests in the Amazon have been turned over to grazing and arable land for feed crops.

Livestock herds cause wide-scale land degradation, with about 20 per cent of pastures considered as degraded through overgrazing, compaction and erosion. The figure is even higher in the drylands, where inappropriate policies and inadequate livestock management contribute to advancing desertification, the report says.

The livestock business is among the most damaging sectors to the earth's increasingly scarce water resources, contributing among other things to water pollution and eutrophication. The major polluting agents are animal wastes, antibiotics and hormones, chemicals from tanneries, fertilizers and pesticides used to spray feed crops. Widespread overgrazing disturbs water cycles, reducing replenishment of above and below ground water resources and significant amounts of water are used to irrigate feed crops, the report says.

While the case against meat consumption in affluent countries may be growing, there are calls to recognise the quite different situations elsewhere. Carlos Sere, executive director of the International Livestock Research Institute, has recently highlighted the dependence of many sub-Saharan subsistence farmers on their animals.

"Rich and poor worlds are colliding when it comes to the value of livestock production and consumption. In this case, both points are understandable — for their own worlds. The rich world may need to cut back on livestock consumption and production, but the poor world cannot afford to do so," he said.

"Research shows that very modest amounts of animal-sourced foods

in the diets of the poor can have tremendous health benefits."

But he points out that "livestock producers in rich countries practice factory farming, which can treat animals inhumanely and depends on vast amounts of resources, particularly in the forms of water, cereals and energy."

"Concern for the environment is legitimate, but it should not override concern for the livelihoods of 1.2 billion poor people."

"While people in rich nations are harming their health by eating too much fatty red meat and cheese, many people in the cities and rural areas of Africa, Asia and Latin America, particularly children and women in their child-bearing years, are malnourished because they are not consuming enough eggs, meat and milk," he says.

And, according to a new book called *Food Policy*, one of the authors, Tim Lang, told the *Daily Telegraph* that consumers in affluent countries may soon be facing restraints on their food availability. He warned that consumers in affluent countries may face rationing unless they reduce their consumption of meat and dairy products.

Lang and his co-authors David Barling and Martin Caraher, based at City University in London, are developing a system to help consumers navigate options that are nutritious, ethical and sustainable. For British consumers, they are trying to ascertain whether, for example, a Fair Trade banana from the Caribbean is as 'sustainable' as a lamb shank from Wales. Lang, who first coined the term 'food miles' now believes the overuse of water in agricultural production presents the biggest threat to future food production.

According to the World Wide Fund for Nature, the production of a pint of milk uses up more than 550 litres of water while the production of a hamburger uses 1,800 litres.

Lang backs a call from Australian academics that consumers eat no more than 90g of meat per day, half or less than the current level in most affluent countries.

"Huge amounts of water are being used as irrigation or fed directly to animals," says Lang. A return to rationing, though "almost unthinkable" in peace time, cannot be ruled out, he says.

G20 fears

In spite of global plaudits, many people are concerned about the lack of environmental targets in the summit's conclusion. **Nigel Williams** reports.

Behind the relief that the G20 summit came up with a number of agreed measures to tackle the global recession, there was disappointment that it failed to boost low carbon economies and tackle climate change, which appeared almost to be ignored. It was meant to, in Gordon Brown's words, strike a 'global green new deal' to tackle climate change and pull the world out of recession at the same time. In fact, the G20 meeting has raised alarm bells about future progress on tackling climate change.

Far from being at the heart of last month's London summit, the looming climate crisis was relegated to a brief and vague afterthought at the very end of the communiqué. This has had an immediate dampening effect on negotiations on a new treaty supposed



Concerns: Gordon Brown, the British prime minister who chaired the G20 summit in London this month, has fuelled concerns that not enough has been done to boost low carbon economies and tackle climate change. (Photo: Jeff J. Mitchell/Getty.)



Dramatic: As world leaders met in London, researchers monitored the dramatic break-up of the Wilkins ice sheet in Antarctica, a likely result of climate change. (Photo: British Antarctic Survey.)

to be agreed at a vital meeting in Copenhagen at the end of the year.

And while the delegates met in London, researchers monitoring ice cover in the Antarctic recorded the dramatic split of the Wilkins ice sheet into the sea, as a likely result of climate change.

Participants in the negotiations ahead of Copenhagen — now underway in Bonn — say that, partly as a result, they are now further from reaching agreement than they were towards the end of the George Bush presidency, despite the new energy and commitment brought to environmental matters by the Obama administration. Rich and poor countries now appear to be further apart than at the end of 2007, when the former president was still trying to obstruct progress.

Gordon Brown and the other leaders — with the notable exception of Silvio Berlusconi — have long been verbally signed up to ‘low carbon growth’ as the best way out of the recession but commentators are concerned at the lack of progress. It promises more jobs and more opportunities for innovation than business as usual and a new study by the University of Massachusetts–Amherst shows that investing in the green economy creates nearly four times as many jobs as traditional investment.

And there is widening awareness of the urgency of tackling global warming. “We are at a last opportunity moment,” one of Britain’s top

negotiators told a private meeting. Yet, in the event, climate change and the need for a ‘green recovery’ only made paragraph 27 and 28 of the 29-paragraph communiqué. Language, already weak in the final draft, was watered down even further by the leaders at the end of the summit and, after the initial euphoria, commentators have been increasingly concerned that the summit delivered too little and that environmental concerns and climate change failed to make a mark.

The main reason was that China and other developing countries refused to agree to anything that might pre-empt the negotiations on the new climate treaty. The result was not just a lost opportunity to put some political momentum behind the talks in Bonn — the first of four negotiating sessions leading to the Copenhagen meeting — but it actually set the talks back.

Developing countries have also been disillusioned by how little of the stimulus money promised by the G20 summit participants has so far been pledged to green investment, despite all the rhetoric. Though many of the biggest — such as China, India and Mexico — are ready to take their own measures, they are reluctant to commit to them when richer nations are doing so little.

The deadlock is made worse because developed countries have also failed to make good on promises made at the end of 2007 to set aside money to help poorer countries tackle climate change and adjust to its effects.

Dolphin surprise

A large new population of rare Irrawaddy dolphins has just been described. **Nigel Williams** reports.

Researchers announced last month the discovery of a large population of one of the world’s rarest cetaceans — the Irrawaddy dolphin — living amongst the mangrove swamps of Bangladesh.

The species, previously only numbered in hundreds and considered vulnerable, has been swelled by a survey in Bangladesh for the first time which estimates an additional 6,000 individuals living in the region.

Researchers carried out a survey for the first time in the freshwater regions of Bangladesh’s Sundarbans mangrove forest and adjacent marine waters in the Bay of Bengal.

The discovery has been reported in the *Journal of Cetacean Research and Management* by a team including Brian Smith, Rubaiyat Mansur Mowgli and Samantha Strindberg of the Wildlife Conservation Society (WCS) and Benazir Ahmed of Chittagong University.

“This discovery gives us hope that there is a future for Irrawaddy dolphins,” says Smith, lead author of the study. “Bangladesh clearly serves as an important sanctuary for Irrawaddy dolphins and conservation in the region should be a top priority.”

Despite finding this large population, the study’s authors warn that the dolphins are becoming increasingly threatened by accidental entanglement in fishing nets. During the study, researchers found two dolphins that had become entangled and drowned in fishing nets — an occurrence noted by local fishermen.

In a second paper published in *Aquatic Conservation*, Smith and his co-authors report the additional long-term threat to the dolphin population of declining freshwater supplies caused by upstream water diversion coupled with sea-level rise as a result of climate change. These circumstances also threaten the Ganges River dolphins, an endangered species with a range that overlaps with the Irrawaddy dolphins in the Sunderban mangrove forest. The recent extinction of the Yangtze river dolphin, or baiji, is a reminder of how vulnerable freshwater dolphins